

FIG. 1

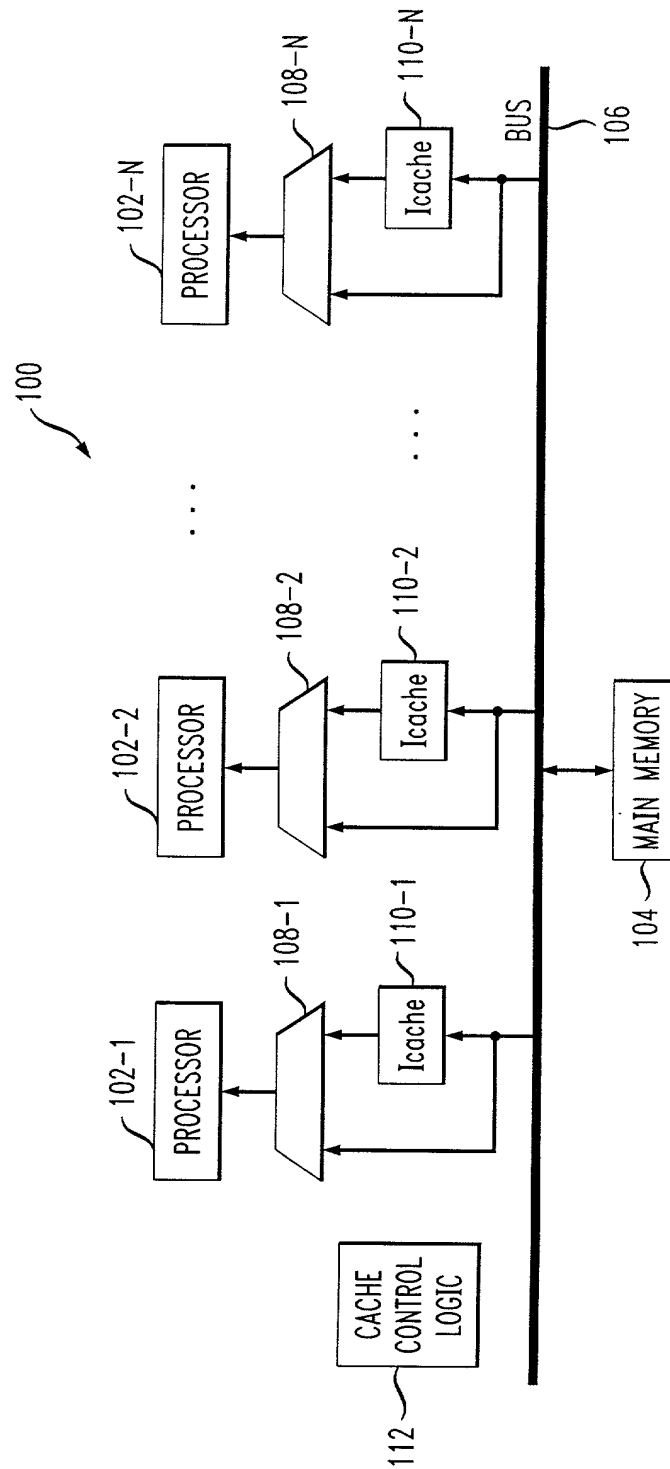


FIG. 2

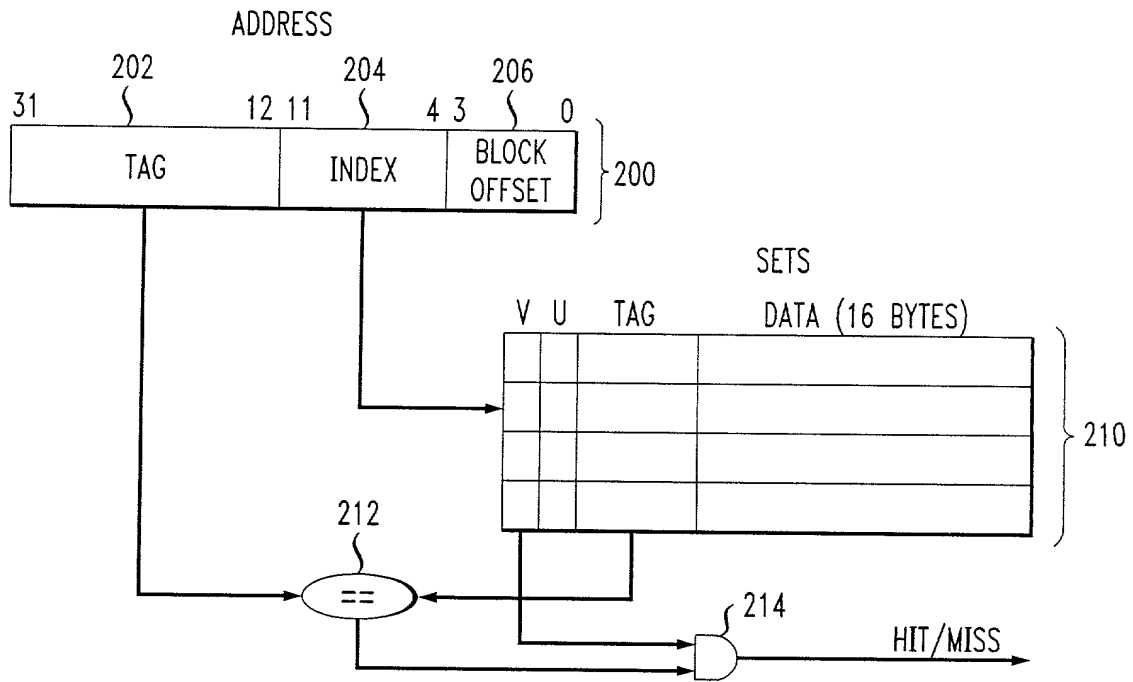


FIG. 3

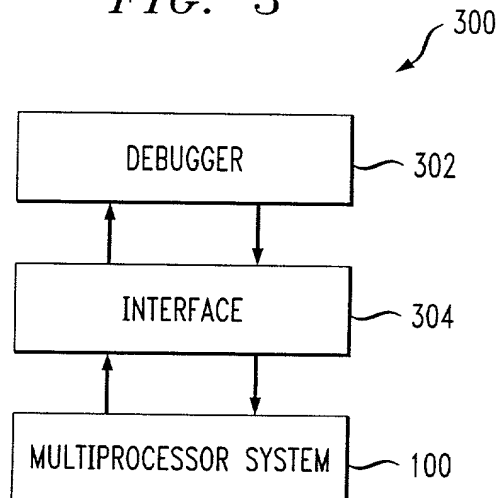


FIG. 4

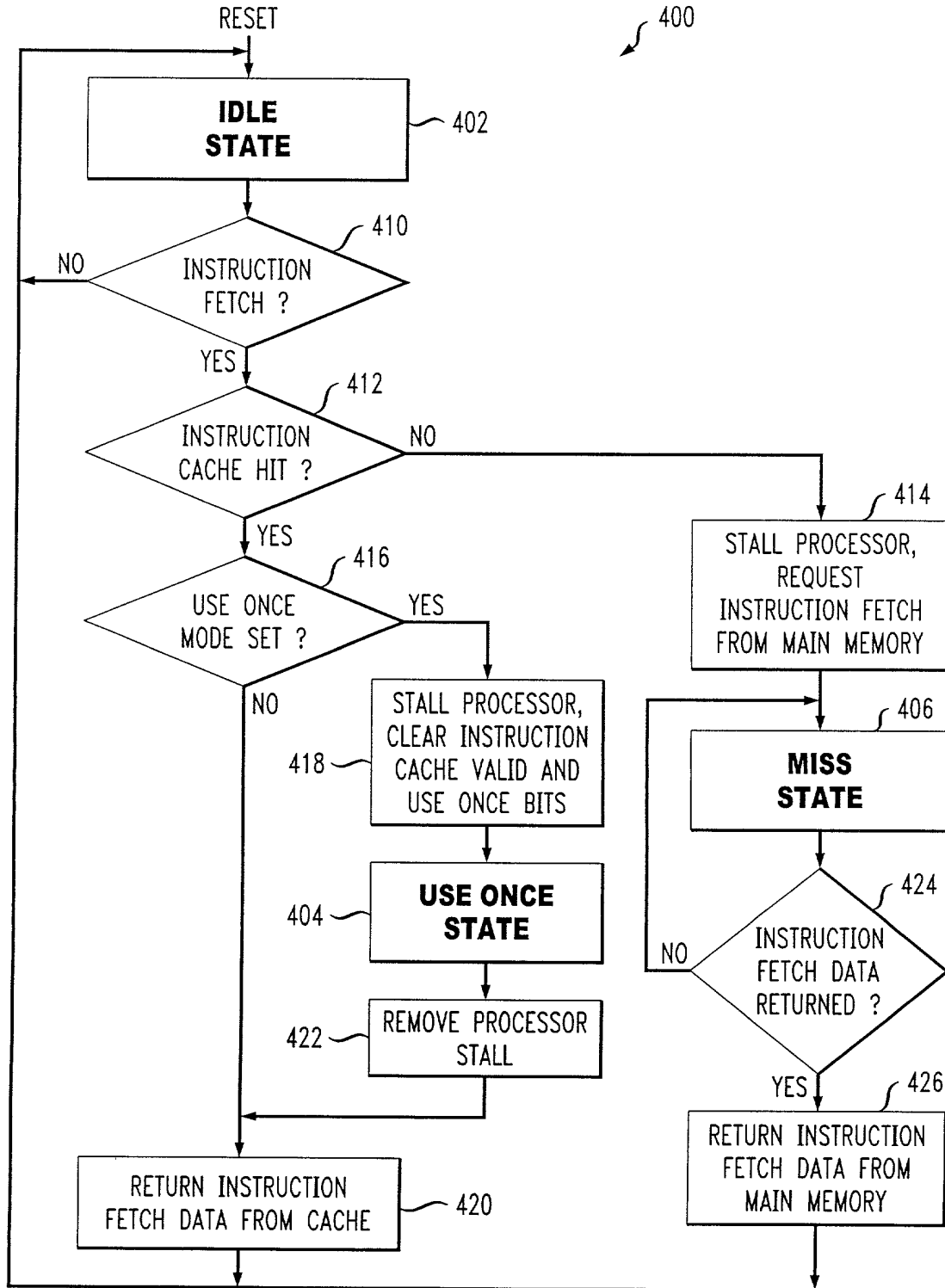


FIG. 5

(a)

```

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 0
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: x
P0 cache[index(swbpt)] Data state: x
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 0
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: x
P2 cache[index(swbpt)] Data state: x

```

(b)

```

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 1
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: tag(swbpt)
P0 cache[index(swbpt)] Data state: DEBUG
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 0
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: x
P2 cache[index(swbpt)] Data state: x

```

(c)

```

P0 state: DEBUG
P0 cache[index(swbpt)] V state: 1
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: tag(swbpt)
P0 cache[index(swbpt)] Data state: DEBUG
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 0
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: x
P2 cache[index(swbpt)] Data state: x

```

(d)

```

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 1
P0 cache[index(swbpt)] U state: 1
P0 cache[index(swbpt)] Tag state: tag(swbpt)
P0 cache[index(swbpt)] Data state: bopcode
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 1
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: tag(swbpt)
P2 cache[index(swbpt)] Data state: DEBUG

```

FIG. 5 (cont'd)

(e)

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 0
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: x
P0 cache[index(swbpt)] Data state: x
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: DEBUG
P2 cache[index(swbpt)] V state: 1
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: tag(swbpt)
P2 cache[index(swbpt)] Data state: DEBUG

(f)

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 0
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: x
P0 cache[index(swbpt)] Data state: x
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 1
P2 cache[index(swbpt)] U state: 1
P2 cache[index(swbpt)] Tag state: tag(swbpt)
P2 cache[index(swbpt)] Data state: bopcode

(g)

P0 state: NONDEBUG
P0 cache[index(swbpt)] V state: 0
P0 cache[index(swbpt)] U state: 0
P0 cache[index(swbpt)] Tag state: x
P0 cache[index(swbpt)] Data state: x
P1 state: NONDEBUG
P1 cache[index(swbpt)] V state: 0
P1 cache[index(swbpt)] U state: 0
P1 cache[index(swbpt)] Tag state: x
P1 cache[index(swbpt)] Data state: x
P2 state: NONDEBUG
P2 cache[index(swbpt)] V state: 0
P2 cache[index(swbpt)] U state: 0
P2 cache[index(swbpt)] Tag state: x
P2 cache[index(swbpt)] Data state: x